DOCUMENT RESUME

ED 420 254 HE 031 306

AUTHOR Chauvin, Sheila W.; Bowdish, Bruce; Krane, N. Kevin
TITLE Do Faculty Perceive Professional Development Differently Based on Their Tenure Status?
PUB DATE 1997-03-00
NOTE 31p.; Paper presented at the Annual Meeting of the American Educational Research Association (Chicago, IL, March 1997).
PUB TYPE Reports - Research (143) -- Speeches/Meeting Papers (150)
EDRS PRICE MF01/PC02 Plus Postage.
DESCRIPTORS College Instruction; *Educational Attitudes; *Faculty; Faculty College Relationship; Grantsmanship; Higher Education; *Medical School Faculty; Questionnaires; Research; Role Perception; Teacher Role; *Tenure; Test Reliability

ABSTRACT

This study investigated the influence of role expectations, as defined by tenure status, on medical school faculty attitudes toward professional development activities. A total of 226 full-time faculty within a medical school completed a 15-item professional development goals questionnaire. The study found that full-time faculty perceptions of professional goals differed based on their tenure status, and that the teaching goals and research goals scales of the questionnaire predicted tenure status effectively and reliably. It also found that tenure-track faculty placed higher importance on professional development goals for teaching than for research, whereas non-tenure-track faculty placed higher importance on professional development goals for research than for teaching. (Contains 15 references.) (MDM)

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Do Faculty Perceive Professional Development Differently Based on Their Tenure Status?

Sheila W. Chauvin
Bruce Bowdish
N. Kevin Krane

Tulane University School of Medicine
New Orleans, Louisiana

Paper presentation at the annual meeting of the
American Educational Research Association
Chicago, Illinois
March 1997

HE031306

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Do Faculty Perceive Professional Development Differently

Based on Their Tenure Status?

Introduction

The primary purpose of this paper is to report the initial findings of an exploratory study of faculty perceptions of specific professional development goals in a medical school. A secondary purpose of the paper is to examine and discuss issues related to the development of an instrument for discriminating faculty members' tenure status based on their views of various professional development goals. The authors examine and discuss the results of this study in light of the professional literature in faculty development and medical education with a focus on specific elements of organizational structure and culture. Finally, the authors explore the usefulness of this study for developing and restructuring formal faculty and instructional development programs.

Based on the initial findings, the authors explore the influence of the institutional expectations associated with tenure status on faculty members' responses to various faculty and instructional development initiatives. This study is unique for two reasons: 1) it focuses on professional development goals as specified by full-time faculty members, rather than simply their perceived needs and preferences for various types of activities; and 2) it examines faculty perspectives pertaining to ongoing professional development within an organizational context.

The study used a quasi-experimental research design (Cook & Campbell, 1979) and quantitative research methods to investigate several research questions: 1) What are full-time faculty members' perceptions of professional development goals pertaining to content expertise, research, teaching effectiveness, and career advancement and planning? 2) Can scale scores for

content expertise, research, teaching, and career advancement professional development goals reliably predict an individual's tenure status? and 3) How many tenure track individuals and non-tenure track individuals can be classified correctly? Qualitative methods involving interview and participant observation were used to understand the meaning and relevance of the full-time faculty members' importance and priority for different professional development goals.

Background

With changes in health care delivery systems, medical education has come under greater scrutiny by the health care industry in the 1990s than in past decades. Educational reform initiatives in these settings have been especially prompted by a rapidly expanding knowledge base and rapidly evolving health care delivery systems in this country. These calls for reform in education and professional services hold significant implications for the ways faculty members teach and students learn during their medical education careers. Such changes also suggest significant changes in the perceived and realized roles of faculty members and how they achieve success in higher education.

The results of a three-year project of the Association for American Medical Colleges (Swanson & Anderson, 1993) involving medical schools throughout North America reiterate these concerns and provide recommendations and strategies for implementing changes in medical education. Seven of the eleven recommendations in the final summary report (Swanson & Anderson, 1993) target directly the enhancement of teaching/learning effectiveness. Bland and Holloway (1995) also stress the need to target teaching and learning effectiveness and cross-disciplinary collaboration, arguing that "if medical school faculty roles and rewards do not change, the schools will be bankrupt." (p.32) Given the increasing knowledge base and the financial and

time factors associated with physician preparation, teaching and learning effectiveness is essential to the success -- and survival -- of medical education (Bland & Holloway, 1995; Kassirer, 1994; Swanson & Anderson, 1993).

The present and anticipated conditions in medical education provide interested professionals with a natural laboratory for examining variables that might influence significantly the future of faculty development and evaluation in higher education. Despite the increased attention in higher education settings on faculty effectiveness as teachers, it is commonly recognized that formative support for the continuous improvement of teaching effectiveness is frequently up to the individual faculty member with limited opportunities to engage in comprehensive, collaborative, data-based, and continuous professional development. Despite efforts to emphasize teaching roles for faculty, research productivity continues to overshadow teaching excellence in tenure, promotion, and merit pay decisions at many institutions (Boyer, 1990; Weimer, 1992). For many faculty members, the individual and institutional conflicts between teaching and research are further complicated by an institution's service expectations for faculty.

Given the typical organizational structures of present-day medical schools, unlike many post secondary institutions, the expectations for research, grantsmanship, and services seem to be especially strong motivators for faculty. Faculty in academic medical institutions must be highly successful and productive in all three domains if they are to advance in their careers successfully. Of course, teaching effectiveness is expected, but in reality, faculty involvement in teaching is often viewed more as a voluntary or support function than as a formal expectation of full-time faculty members in medical schools. Exemplary teaching is certainly a positive characteristic, but

it does not replace achievements expected in any of the other domains, nor does it contribute significantly toward promotion, or the granting of tenure in many medical schools. Yet, the fundamental role of medical schools is the education and training of future physicians. Like other graduate institutions, administrators and faculty in medical schools struggle with these faculty development and faculty evaluation issues in the face of dwindling resources, while simultaneously striving to recruit and maintain high quality faculty members and students and provide high quality educational programs and health care services in a rapidly changing environment.

How do we respond to the public call for enhancing the quality of teaching and learning? How do we develop a common language between the faculty and students about effective teaching and learning, raise the level of attention given to faculty members' roles as teachers, and involve faculty members in collaborative efforts to enhance teaching and learning effectiveness? Clearly, the faculty, instructional, and organizational development literature suggests that understanding and responding to faculty perspectives and needs are key to the success of professional development initiatives. Most efforts in the past have focused primarily on traditional needs assessment surveys that target preferences for activities and have paid little attention to the influence of individuals' professional goals on their participation in faculty/professional development initiatives. This study investigated the influence that role expectations, as defined by tenure status, had on the importance associated with these goals, as determined by the use of a self-administered questionnaire designed to involve faculty members in identifying their views of various professional development goals.

Methods

Data Collection

All full-time faculty members in the medical school (N = 433) were surveyed in August 1995 as part of a larger study. Full-time faculty members were identified through the cooperation of the human resources department in the school. A personalized pre-survey letter was sent to each faculty member explaining the study. Department chairpersons also received a pre-letter asking them to encourage full-time faculty members in their departments to participate in the study. Questionnaire packets were sent to full-time faculty members in all biomedical and clinical science departments via the campus mail system with personalized cover letters in each questionnaire packet. Participants were asked to return their completed questionnaires in an enclosed, self-addressed envelope to assure confidentiality.

A thank you card was sent to each respondent on the day their completed questionnaire was received. Two iterations of systematic follow-up were also used in encourage participation. The first follow-up included a reminder card that was sent five days after the initial mailing. Ten days following the initial distribution, a follow-up letter and a duplicate copy of the questionnaire was sent to non respondents.

Instrument Design

The study included an instrument designed to obtain faculty members' views of the importance of 15 professional development goals representing content expertise, scholarship and research activities, teaching effectiveness, professional collaboration, and professional advancement. This instrument, shown in Table 1, represents a modified version of a questionnaire used in an earlier study (Chauvin & Eleser, 1996). The items for the instrument used in this study

were revised based on criteria gleaned from the professional literature in faculty development and medical education.

Study participants were asked to indicate the importance of each goal using a 4-point Likert scale (Not Important, Somewhat Important, Important and Very Important). Three additional questionnaire items asked participants to rank their top three goals from this list. Demographic data pertaining to tenure status, position, years of professional experience, years of experience in the medical school, and department affiliation were also collected.

Descriptive item statistics and other analyses were completed for the total sample and for subgroups (e.g., department affiliation, position/faculty rank, age, years experience, and gender). A content analysis of the written comments was completed to identify the common themes and a discriminant function analysis (DFA) was performed to determine whether the scale scores reliably predict an individual's tenure status and can be used to classify tenure track and non-tenure track individuals accurately?

Results

Sample

Useable data were obtained from 234 full-time faculty members, yielding a response rate of 54.05%. Demographic data for the sample revealed that 60.65% of the respondents were tenure track professionals, of which 75.57% had not yet achieved tenure and 24.43% had acquired tenure in the medical school at the time of the study. Non-tenure track faculty members who returned a completed questionnaire packet represented 39.35% of the respondent group. These data were generally representative of the proportion of tenure track and non-tenure track position held by the total population of full-time faculty members in the medical school. Faculty

Table 1. Professional Development Goals Questionnaire Items[1]

Item statements
1. Maintaining in-depth knowledge of the content in my field of specialization
2. Maintaining up-to-date knowledge of clinical applications in my field of specialization
3. Broadening my expertise in my general discipline
4. Improving my skills in research methods and techniques
5. Developing a network of colleagues with whom I can share my research ideas, progress, and problems
6. Increasing my level of productivity in research
7. Developing my "grantsmanship" skills
8. Improving my effectiveness in publishing/presenting my scholarly work
9. Renewing my enthusiasm for conducting research
10. Improving my skills as an effective teacher
11. Developing a network of colleagues with whom I can share my instructional ideas, progress, and problems
12. Improving my knowledge of how to document my effectiveness as a teacher
13. Renewing my enthusiasm for teaching
14. Developing my own professional development plan to qualify for promotion and/or tenure
15. Developing my own professional development plan to qualify for a different role (e.g., research program/center director, department chairman, dean, or chancellor) and department

[1]This scale used a four-point Likert scale: 1=Not Important, 2=Somewhat Important, 3=Important, 4=Very Important.

responding to the questionnaire reported one to 45 years of professional experience, with a mean of 15.7 years and a median of 15 years. The number of years experience at the medical school reported by the respondents ranged from one to 38, with a mean of 9.68 years and a median of 7 years.

Data Screening Techniques

Prior to beginning data analysis, Windows-based SPSS version 7.5 (SPSS Inc., 1996) and VM-BMDP version 90 (BMDP Statistical Software Inc. May 20, 1991) were used to examine the data set for missing values and outliers. Any participant that failed to contribute data to each of the variables measured for statistical investigation constituted a missing case. Seven cases fit the definition of missing data, therefore (n = 227) participants' data were retained for analyses.

The data were also examined for statistical outliers prior to completing the analyses. Based on Tabachnick and Fidell's (1989) use of the Mahanolobis D^2 distances, only one case was determined to be a multivariate outlier, resulting in a final sample of 226 respondents.

Descriptive Statistics

The frequencies of participants' responses to the *Professional Goals Questionnaire* are displayed in three separate formats: 1) Table 2 shows the valid percent responses for the total sample (n = 226), 2) Table 3 shows the valid percent responses for tenure-track participants (n = 125), and 3) Table 4 shows the valid percent responses for non-tenure track participants (n = 101).

Table 2. Descriptive summary of item statistics for the *Professional Goals Questionnaire* for the total sample of respondents (n = 226)

Item No.	Not Important	Somewhat Important	Important	Very Important	Mean	Std. dev.
1	.4	1.8	6.6	91.2	3.885	.406
2	2.7	7.2	22.1	68.0	3.554	.746
3	0.0	15.6	36.6	47.8	3.321	.730
4	6.8	21.6	33.3	38.3	3.032	.934
5	6.2	22.6	32.3	38.9	3.040	.930
6	8.0	15.6	36.6	39.7	3.080	.934
7	13.8	23.7	28.6	33.9	2.826	1.051
8	9.3	16.8	35.0	38.9	3.035	.965
9	19.4	29.2	29.2	22.2	2.542	1.042
10	6.2	20.0	38.2	35.6	3.031	.898
11	13.3	30.1	36.3	20.4	2.637	.953
12	18.4	30.9	33.6	17.0	2.493	.981
13	21.6	33.5	29.8	15.1	2.385	.988
14	33.8	18.5	19.9	27.8	2.417	1.217
15	42.5	23.1	19.0	15.4	2.072	1.110

Note: Valid Percent Responses to Items Reported (n = 226)

Table 3. Descriptive summary of item statistics for the *Professional Goals Questionnaire* for the tenure track subgroup of respondents (n = 125)

Item No.	Not Important	Somewhat Important	Important	Very Important	Mean	Std. dev.
1	.8	2.4	5.6	91.2	3.872	.457
2	4.1	8.2	24.6	63.1	3.467	.815
3	0.0	20.2	29.8	50.0	3.298	.786
4	8.1	17.1	33.3	41.5	3.081	.955
5	5.6	19.2	28.8	46.4	3.160	.928
6	8.9	12.9	34.7	43.5	3.129	.954
7	13.0	22.0	28.5	36.6	2.886	1.050
8	10.4	17.6	31.2	40.8	3.024	1.004
9	19.8	29.3	31.0	19.8	2.509	1.026
10	5.6	22.4	39.2	32.8	2.992	.884
11	16.0	31.2	35.2	17.6	2.544	.963
12	20.5	35.2	32.0	12.3	2.361	.945
13	22.2	39.3	27.4	11.1	2.274	.934
14	46.2	16.2	17.1	20.5	2.120	1.205
15	42.6	22.1	18.9	16.4	2.090	1.128

Note: Valid Percent Responses to Items Reported (n = 125)

Table 4. Descriptive summary of item statistics for the *Professional Goals Questionnaire* for the non tenure track subgroup of respondents (n = 101)

Item No.	Not Important	Somewhat Important	Important	Very Important	Mean	Std. dev.
1	0.0	1.0	7.9	91.1	3.901	.332
2	1.0	6.0	19.0	74.0	3.660	.639
3	0.0	10.0	45.0	45.0	3.350	.657
4	5.1	27.3	33.3	34.3	2.970	.909
5	6.9	26.7	36.6	29.7	2.891	.915
6	7.0	19.0	39.0	35.0	3.020	.910
7	14.9	25.7	28.7	30.7	2.752	1.053
8	7.9	15.8	39.6	36.6	3.050	.921
9	19.0	29.0	27.0	25.0	2.580	1.065
10	7.0	17.0	37.0	39.0	3.080	.918
11	9.9	28.7	37.6	23.8	2.752	.932
12	15.8	25.7	35.6	22.8	2.653	1.004
13	20.8	26.7	32.7	19.8	2.515	1.036
14	19.2	21.2	23.2	36.4	2.768	1.141
15	42.4	24.2	19.2	14.1	2.051	1.091

Note: Valid Percent Responses to Items Reported (n = 101)

Principal Axis Factoring (PAF) procedures in SPSS for Windows (Version 7.5) were used to examine the constructs represented in the 15-item instrument and to identify factor score measures (Norusis, 1990). A set of a priori decisions rules were used to identify the factors represented in the instrument and to construct scale scores: 1) items were retained with factor loadings of .33 or greater on a single factor; 2) items with loadings less than .33 were omitted. No items loaded on more than one factor in these analyses; thus, decision rules pertaining to these cases were not needed (Gable & Wolf, 1993; Kachigan, 1986).

As shown in Table 5, the results of the PAF analyses yielded two predictor variables for the subsequent discriminant function analysis (DFA): *Research Goals* (Cronbach's Alpha = .88)

and *Teaching Goals* (Cronbach's Alpha = .83). The Research Goals (Factor 1) factor score represents Items 4, 5, 6, 7, and 8 listed in Table 1; the Teaching Goals (Factor 2) factor score represents Items 9, 10, 11, 12, and 13 listed in Table 1. The five remaining items in the questionnaire were omitted from the analysis. Three of the items (Items 1, 2, 3 in Table 1) loaded as a single factor representing knowledge/content expertise (Factor 3), but were removed from the analysis due to ceiling effects and low reliability (Cronbach's Alpha = .39). Although the remaining two items (Items 14 and 15) reflected goals pertaining to professional development planning, the removal of Item 14 enhanced the reliability of the scales significantly and Item 15 failed to load on either the Teaching Goals or Research Goals factors ($r < .40$). A factor-analyzed version of the Professional Goals Questionnaire containing 15 items loading on two factors (Teaching Goals and Research Goals) was used for the discriminant function analysis and supplemental analyses.

Values for the *known groups* variable for the DFA were obtained from participants' self-report of tenure status on the questionnaire: tenured/tenure track, not tenured/tenure track, non-tenure track. These data were collapsed to form two *known groups*: tenure track (Group 1) and non-tenure track (Group 2).

A bivariate correlation was calculated to assess the linear relationship between the two factors (Factor 1: Research Goals and Factor 2: Teaching Goals). The results of this analysis revealed a small to moderate positive relationship between the factors or scales identified with principal axis factoring.

Table 5. Summary of factor loadings in principal axis factoring (PAF) for Items 1 - 15 of *Professional Goals Questionnaire*

Item No.	Factor 1	Factor 2	Factor 3
1			.53296
2			.62512
3			.36910
4	.80464		
5	.62207		
6	.92663		
7	.82844		
8	.65631		
9		.41408	
10		.76772	
11		.69474	
12		.82019	
13		.77076	
14		*.42517	
15		<.33000	

* Item deleted from scale to maximize alpha reliability coefficient
Kaiser-Meyer-Olkin Measure of Sampling Adequacy = .84001
Bartlett Test of Sphericity = 1262.2435, Significance = .00000

Multivariate Analyses

As one might recall, a multivariate analysis of variance (MANOVA) and its corresponding discriminant function analysis (DFA) are mathematically equivalent. Like canonical correlation the MANOVA and the DFA are techniques that substitute an ordinal measure (treatment or condition) for one set of variables. The ordinal variable is used to create a redistributed matrix from which a reduced set of composite variables are generated. The reduction of univariate measures enables the incorporation of multiple independent variables and multiple dependent

variables in an experimental design while enhancing statistical power. DFA can be utilized to: a) examine the respective contribution of each of the variables used in the generation of a multivariate composite and b) how well the derived discriminant function classifies individuals into respective groups. Thus, the significance reported for the DFA in this study can be considered equivalent to one obtained for the main effect of a one-way MANOVA (Tabachnick and Fidell, p. 505, 1989). The statistical assumptions required to perform this multivariate technique (DFA) are likewise the very same ones required for one-way MANOVA.

The data used in the analyses were screened to test the assumptions of multivariate normality, homogeneity of variance-covariance, linearity, multicollinearity and singularity, and homoscedasticity of residuals. (Tabachnick and Fidell, 1989) Since Mahanolobis D^2 distances were used to remove outlier cases, the examinations of skewness and kurtosis were implemented as indirect descriptive measures of the sample. To test the assumption of homogeneity of variance-covariance, the SPSS MANOVA's Box-M test was used since it is ". . . a notoriously sensitive test of homogeneity of variance-covariance matrices . . ." (Tabachnick & Fidell, 1989, p. 379) According to these researchers, the Box-M test can be used equally well for designs that contain both group samples of equal size and unequal size. As shown in Table 6, the results of the Box-M test demonstrated no reason to reject the assumption of equal dispersion.

Table 6. Results of Box's M Test of Homogeneity of Variance-Covariance Matrices

Box's M	Approximate F	Degrees of Freedom	Significance
1.2878	.40227	19350056.2	.7514

The squared multiple correlations (SMC) between the Teaching Goals and Research Goals variables were analyzed using measures of tolerance (1-SMC). Tolerance in the analyses for this study was .001; thus, a variable excluded from the solution had a tolerance of at least .999. None of the variables were barred from entering the solution, and as shown in Table 7, the results do not suggest evidence of multicollinearity or singularity.

Table 7. Summary of measures of multicollinearity of variables.

Variable Name	R-Squared	F-Statistic	Significance
Research	0.152799	20.83	**0.00000
Teaching	0.153594	20.96	**0.00000

Squared multiple correlations of each variable with all other variables and tests of significance of multiple regression degrees of freedom for f-statistics are 2 and 231.

** $P < .001$

According to Tabachnick and Fidell (1989) "Examination of residuals scatter plots provides a test of assumptions of normality, linearity, and homoscedasticity between predicted DV [dependent variable] scores and errors prediction" (p. 131). Plots were examined for every combination of dependent variable after outliers were removed and data transformations were implemented. Tabachnick and Fidell (1989) suggests that "Transformation of the variables may reduce or eliminate heteroscedasticity" (p. 133). The expected rectangular plots were clear suggesting no violation of the assumption was present in either experiment. The pooled within-groups correlation between the Research Goals and the Teaching Goals variables was r = .38.

Discriminant Function Analysis (DFA)

As shown in Table 8, a discriminant function was calculated with a combined $\chi^2(2) = 6.36$ ($p<.05$), indicating that the variables discriminate tenure track from non tenure track participants effectively. The discriminant function accounted for 100% of the between-group variability. The standardized canonical discriminant function coefficient for *Research Goals* was -.81 and for the *Teaching Goals* was .93. The power of the discriminant function was confirmed by examining the mean and standard deviation for each group (tenure: mean = .15, SD - .98; non tenure track: mean = -.19, SD = 1.03). The pooled within-groups correlations between the discriminant variables of *Research Goals* and *Teaching Goals* and the standardized canonical discriminant correlation function, indicates that the best predictor of tenure status was the *Teaching Goals* variable ($r_c = .65$), as compared to the *Research Goals* variable ($r_c = -.49$).

Table 8. Summary statistics resulting from canonical discriminant function analysis.

Eigenvalue	Canonical Correlation	Wilks' Lambda	Chi-Square	Degrees of Freedom	Significance
.0289	.1677	.97	6.36	2	*.042

* $P < .05$

Tenure track participants assigned higher importance to teaching professional development goals (mean = 1.55, SD = .24) than did non tenure track participants (mean = 1.49, SD = .26). Conversely, non tenure track participants assigned higher importance to research professional development goals (mean = 1.41, SD = .27), than did tenure track participants (mean = 1.36, SD = .28). The analyses also revealed a positive relationship between participants'

perceptions of the importance of teaching and research professional development goals ($r = .35$, $p < .05$), suggesting that the relationship would be statistically significant if analyzed separately.

As shown in Table 9, a classification procedure for the total useable sample ($n = 226$) classified 128 (56.6%) grouped cases correctly. The stability of the classification procedure was examined by cross-validating grouped cases and the results revealed that indicating that 124 (54.9%) of the grouped cases were classified correctly over and above chance.

Table 9. Summary statistics resulting from discriminant analysis classification.

		Predicted Group Membership	
Actual Group	**No. of Cases**	**Tenure Track**	**Non Tenure Track**
Tenure Track	125	92	33
		73.6%	26.4%
Non Tenure Track	101	65	36
		64.4%	35.6%

Percent of original grouped cases classified correctly = 56.64%
Percent of cross-validated grouped cases classified correctly = 54.9%

Limitations of the Study

The questionnaire used in the current study was part of a larger survey. Given the demanding schedules of medical school faculty members, the task burden associated with a four-page questionnaire booklet may have been perceived by some individuals as too great, thereby reducing the total number of participants' responses submitted for analysis. A second consideration is that some faculty members may not have responded because they perceived this type of activity to be a low priority or not applicable to their professional situation or primary

responsibilities. Informal reports from some faculty and administrators in the school suggest that past efforts to solicit information from the faculty via questionnaires have often resulted in very low response rates (e.g., less than 10%). In light of these conditions, considerable efforts to encourage participation seem to have been successful in achieving an acceptable response rate, given the particular characteristics of the study population; however, a response rate higher 54% would have strengthened the study.

The response rate may also have been influenced by the fact that this study was the first systematic effort in the medical school to obtain faculty perspectives on issues related to professional development goals. There was no evidence that a survey of this type had ever been distributed to full-time faculty members in the past. Also, the school did not have a medical education department or a faculty, instructional, and organizational development specialist available in the school until April 1995; thus, formal faculty and instructional development was a new area.

Although significant efforts were made to inform faculty members about the focus and intent of the survey, it is possible that faculty members may have been confused initially about the intent of the survey and how they should respond. In addition to affecting the response rate, those faculty members who did complete and return their surveys may not have been completely candid in their responses to items. Although there is no evidence to suggest that this was the case, it is possible that some faculty members might have responded to the goal statements as they believed the organization or professional community would expect them to view professional development teaching and research, rather than how they actually viewed the professional development goal statements.

Discussion

This study used a discriminant function analysis (DFA) design (Tabachnick & Fidell, 1989) to investigate faculty perceptions of the importance of specific professional development goals. The fifteen statements comprising the *Professional Development Goals Questionnaire* represented several domains of professional development often associated with the major roles expected of full-time faculty members: knowledge/content expertise, research, teaching, and professional career advancement/planning. Three primary research questions guided the investigation: 1) What are full-time faculty members' perceptions of professional development goals pertaining to content expertise, research, teaching effectiveness, and career advancement and planning? 2) Can scale scores for content expertise, research, teaching, and career advancement professional development goals reliably predict an individual's tenure status? and 3) How many tenure track individuals and non tenure track individuals can be classified correctly? Useable data were received from 234 participants, for a response rate of 54.05%. After initial data screening, data from 226 responses were included in the analyses.

This study revealed several interesting findings. First, full-time faculty perceptions of professional goals differ based on their tenure status. Examination of item descriptive statistics, group means and standard deviations, scale scores, and visual examination of graphs depicting scale scores for the tenure track and non tenure track respondents revealed clear differences in the level of importance given to professional development goals for research and for teaching. Second, the *Teaching Goals* and *Research Goals* scales of the *Professional Development Questionnaire* predict full-time faculty members' tenure status effectively and reliably. Third, the standard scale scores for the *Teaching Goals* and *Research Goals* scales were effective for

classifying grouped cases (tenure track, non tenure track) correctly (54.9% over and above the chance factor). Of the two scales, the Teaching Goals was the better predictor of faculty members' tenure status (r_c = .65). Fourth, tenure track faculty members placed higher importance on professional development goals for teaching than for research; whereas, non tenure track faculty members placed higher importance on professional development goals for research than for teaching. Finally, the positive relationship between participants' perceptions of teaching and research professional development goals (r = .35), suggests that if individuals believe professional development is important in one area (e.g., teaching), they are more likely to value professional development in the other (e.g., research). A discussion of the Professional Development Questionnaire is followed by a discussion of each these findings is the remainder of this paper.

Professional Development Questionnaire - Instrument Development

The performance of the *Teaching Goals* and the *Research Goals* scales is encouraging for further instrument development and investigation. An important finding in this study is that neither of the two scales (*Teaching Goals* nor *Research Goals*) can distinguish group differences alone; rather, both scale scores are required to generate what amounts to a profile for distinguishing between groups. Thus, the discriminant function analysis results suggest that each scale is accounting for relatively unique portions of participants' response data.

The results of the principal axis factoring suggest that additional work is needed on the scales measuring perceptions of professional development goals for content expertise and career advancement and planning. In particular, the findings of the present study suggest that the conceptual framework for the knowledge/content expertise domain should be revisited. For example, do faculty members perceive themselves as "holders or vessels of domain-specific

knowledge?" Informal observations of and interactions with faculty members suggest that many individuals talk about their roles as teaching or imparting a specialized body of content, rather than teaching people or facilitating individuals' learning and understanding.

Because academe and its inherent norms and values (e.g., tenure, academic freedom, diversity of ideas and perspectives) place content expertise at the heart of how faculty members define their roles, it may well be that future refinements on the knowledge/content expertise scale should focus on professional development goals that focus on mastering one's command of content from the perspective of learning and how one structures content for learners at various levels (e.g., novice, competent/experienced, and highly competent/expert). That is, it is one thing to be highly knowledgeable of a specific knowledge domain, it is another to be able to communicate that knowledge to various groups (e.g., novice learners) in a way that facilitates their understanding and ability to apply the newly learned knowledge and skills. Clearly, there is an overlap with teaching effectiveness, but a focus on knowledge and how concepts and principles are organized and communicated seems critically important to one's professional development as an academician.

Another conceptual dilemma related to content knowledge and expertise involves clarifying whether one should differentiate pure research, applied research, and classroom-based research, as each type of activity involves the application of one's content expertise. Similarly, given the current emphasis on collaborative, learner-centered, and active, self-directed learning, will it be possible, or even appropriate, to separate research and teaching and learning effectiveness? For example, one explanation for the lower factor loading of .41 obtained for Item 9 shown in Table 5, as compared to the factor loadings for the other items, might be that this

item reflects mixed teaching and research roles that can be observed in medical school. That is, conducting research in a medical school involves a great deal of one-on-one teaching, mentoring, and self-directed study; thus, conducting research, teaching, and learning in some contexts may be viewed as similar, overlapping roles. Similarly, in such teaching and learning situations, are faculty members the sole owners of the knowledge, or are they and their students teaching and learning together as they conduct experiments in research laboratories and interact with patients and solve problems in clinics and hospitals? How might these issues be reflected in institutions where faculty roles and reward systems are changing to meet new curricular, instructional, and organizational demands? Similarly, how will changes in students' learning behaviors influence faculty members' teaching roles and their conceptions of content expertise? Given the rapidly changing health care environments, how will these evolving roles influence faculty members' perceptions of content expertise, research, teaching, and career advancement? Certainly, being able to measure constructs relating to professional development perspectives for teaching and learning can help to answer these questions and future investigations seem exciting.

Perceptions of Professional Development Tenure Status

In light of the literature in faculty, instructional, and organizational development and based on the findings of the current study, the following conclusions are noteworthy: 1) an individual's priority for professional development seems to be influenced by organizational expectations associated with one's tenure status; 2) organizational efforts to support and encourage faculty members' ongoing professional development in one area of responsibility (e.g., teaching) is likely to encourage ongoing growth and development in other areas of responsibility (e.g., research); and 3) contemporary faculty development efforts are faced with increasing challenges to

accommodate individual and organizational expectations. In light of the increasing public calls for enhancing teaching effectiveness in higher education, two important issues seem to be finding ways to resolve conflicts between research roles and teaching roles, as argued by Boyer (1990) and others (Bondeson, 1992; Swanson & Anderson, 1993; and Weimer, 1990), and providing organizational contexts that value and reward the ongoing professional development of faculty members (Henley & Magelssen, 1990). Boyer (1990) reports that 62% of 5,450 college and university faculty respondents in the Carnegie study indicated that teaching effectiveness should be a primary criterion for promotion, yet most reported that research productivity was emphasized over teaching at their respective institutions. Henley & Magelssen (1990) argue that a formal faculty development program within an organization (e.g., a medical school) is one way to emphasize the importance of ongoing faculty development and to encourage faculty members' reflection about and pursue ongoing professional development for their various roles (e.g., teaching and research) throughout their careers.

The results of the current study are consistent with the findings reported by Boyer (1990), Henley and Magelssen (1990) and others (Bondeson, 1992; Swanson & Anderson, 1993; and Weimer, 1990) and seem to reinforce these phenomena and demonstrate the influence that organizational expectations and behavior have on faculty members' decisions about ongoing professional development. For example, it seems clear that when professionals are faced with multiple role expectations, they assign higher importance to those professional development goals that match organizational expectations, particularly those that align closely with their day-to-day responsibilities and activities. Said another way, the types of faculty activities and achievements that are supported and rewarded in the medical school are those that are done. Thus, the findings

in the current study support Henley and Magelessen's (1990) conclusion in their study involving 13 military teaching hospitals that ". . . as an increase in supportive organizational behavior was perceived among the faculty, the perception of their own faculty career development improved as well." (p. 408)

The conclusions drawn in the current study do not suggest that teaching effectiveness is not important to faculty members. Quite the contrary. A review of the descriptive item statistics for the total group and for the two subgroups (tenure track and non tenure track) suggests that professional development goals for teaching are important to both groups; however, when research productivity is necessary to meet organizational expectations and achieve professional rewards, faculty members (in this case, non tenure track) place higher importance on professional development goals in research than in teaching, perhaps in response to their needs for self-efficacy. For example, given the emphasis on research, scholarly productivity and publication in faculty evaluation and advancement structures in the medical school, it is not surprising that the non tenure track group perceived their efforts to enhance research skills as more efficacious than efforts to enhance their teaching effectiveness.

Tenure track faculty members who have already achieved tenure may believe their research skills do not need significant improvement or professional development, since they have already established their abilities as skilled researchers and have evidence of their effectiveness in securing externally-funded grants and establishing recognized lines of investigation. Faculty members who are in tenure track positions who are not yet tenured may believe that their prior achievements (e.g., postdoctoral studies and fellowships) are evidence of their skills as researchers and significant professional development in this area is not needed, thus, their current

efforts are focused on using their skills to obtain externally-funded grants and establish and maintain viable research agendas. For the study group and based on participant observations and informal conversations with faculty members, research productivity appears to be a pivotal factor for decisions about establishing tenure track appointments and awarding tenure. For clinical and research associate faculty appointments, research productivity, and particularly successful grantsmanship, is critical to supporting their clinical investigations. A review of the faculty appointment guidelines in the medical school revealed that clinical and research associate faculty appointments are in the non tenure track series. So, how does faculty development and faculty members' perceptions of the need and importance for enhancing their own professional development factor into this context?

Broadly defined, faculty development is a process that facilitates faculty members' ongoing professional development in their varied and multiple roles, including teaching and research, and promotes their career advancement. Faculty development can also strengthen faculty members' commitments to effective teaching and learning, scholarly productivity, and overall institutional effectiveness (Henley & Magelssen, 1990; Senge, 1990). A campus-wide, faculty development program can provide important links between various teaching and learning units, so that available resources may be used effectively to enhance the various forms of scholarship (Boyer, 1990) and ultimately enhance students' learning and development. Despite the potential benefits, faculty development initiatives, particularly those targeting the enhancement of college level teaching, face formidable barriers in the form of faculty attitudes, orientations to the professions, and institutional environments that, at a minimum, hinder, if not openly reject, instructional improvement initiatives (Weimer, 1990). In light of the results of the current study,

and given the importance of providing learners with high quality education and learning experiences it seems that school, department, and program administrators could enhance the overall effectiveness and productivity of their programs by encouraging faculty development initiatives. Similarly, since participants' responses on the *Teaching Goals* scale were a strong predictor of tenure status and tenure track faculty reported higher importance for professional development for teaching than for research, one might conclude that investments in tenure track positions and formal faculty development initiatives to support teaching effectiveness would benefit high quality programs and overall organizational effectiveness of the medical school in the long run.

Like all institutions of higher learning, medical schools are in a paradoxical situation: existing programs must not only be maintained, but enhanced to accommodate changing student populations and professional standards in the face of rapidly changing health care environments, dwindling resources, and public calls for curricular and instructional reforms. Based on the results of the current study, it seems that more than ever medical education must include faculty development programs to enhance teaching and learning effectiveness and cross-disciplinary collaboration (Swanson & Anderson, 1993). As is found in publications focused on higher education (e.g., *Journal of Higher Education, College Teaching, AAHE Bulletin*), virtually every issue of medical education journals published recently (e.g., *Teaching and Learning in Medicine, Academic Medicine*) contains at least one article that calls for substantial enhancements in teaching and learning effectiveness. Given this level of interest on improving teaching and learning effectiveness, the results of this study reiterate the need to examine faculty development roles and rewards within specific organizational contexts and to approach faculty development

initiatives with both the expected outcomes of individual faculty members and the institution in mind (DeZure, 1996).

Conclusions

In conclusion, the current study demonstrates that survey research and quantitative methods can provide effective techniques for assessing and monitoring faculty priorities for professional development as one develops a formal faculty development program. Understanding faculty members' perceptions of and priority for particular professional development goals within a medical school, college, or university can facilitate developing appropriate interventions and incentives for faculty development initiatives. The demonstrated ability of the *Teaching Goals* and *Research Goals* scales to discriminate faculty tenure status suggests that organizational role expectations have a strong influence on faculty members' receptivity to faculty development initiatives.

The results of this study also suggest that the *Teaching Goals* and *Research Goals* scales are useful tools for monitoring the effectiveness of faculty development programs and the extent to which an institution's mission and vision are shared by administrators and faculty. The scales might also be useful in conducting action-oriented assessment within an institution faced with ongoing change processes related to teaching effectiveness, scholarship and the organizational priorities (e.g., types of faculty appointments, tenure and promotion guidelines) assigned to faculty members' teaching effectiveness and research productivity.

At the onset of this study, questions were posed regarding the faculty members' perceptions of the importance of various professional development goals, and ways in which teaching and learning — the primary mission of medical schools and higher education, generally

— can be enhanced. Although this study focused on one medical school, the methods and conclusions seem applicable to other medical schools, colleges, and universities for gaining a broad understanding of faculty members' perspectives on the importance of teaching and research professional development goals. The findings of the current study support the findings and conclusions in the professional literature and suggest that similar faculty perspectives might be identified in other institutions.

Finally, the findings and conclusions of the current study suggest future research efforts might include continuing instrument development and refinement, follow-up investigations of faculty perspectives for the study sample, and replication of the study with larger samples. Specifically, further development of the *Professional Development Questionnaire* scales pertaining to content expertise and career advancement, is recommended. Large scale studies might examine faculty members' perceptions and organizational characteristics across institutional settings and studies that examine the discriminating ability of the scales for group membership variables in addition to tenure status. Future studies might also incorporate quantitative and qualitative methodologies to obtain a in-depth understanding of faculty perceptions and motivations for professional development.

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